

AvaLE: Uncovering the Origins of Our Moon

It is the year 2046, A decade ago, all the major Space Agencies around the world came to the same conclusion that if all of them joined forces, then they could be much more efficient in the Exploration of Space, and so, The International Space Exploration & Research Organisation (ISERO) was formed. Joining forces for the betterment of Humanity.

For Centuries, People have wondered how the Bright White orb in the sky, Our Moon, formed. And now, ISERO's Latest Project, AvaLE (Automated Vehicle-Assisted Lunar Explorer), will help us to answer that question.

AvaLE is a Robotic Rover that is set to land on the moon and collect Samples from the moon's surface, which would be then picked up by a Return Rocket to be brought back to Earth, where scientists from all around the world will use advance equipment to determine the best theory that would explain the formation of our Moon.

It is the 12th of April, 2046. The launch Day for AvaLE. AvaLE sits atop an SLS Rocket. The Entire world waits with bated breath as the Launch Timer counts down. Everyone is eager to see the Rocket roar to Life and climb up towards the sky.

"T- 10...9...8...7...6... Ignition Sequence Start...5...4...3...2...1..... LIFT OFF! We Have LIFT-OFF!!"

With a blinding light and a deafening sound, the rocket roars to life and starts gaining speed. Within just a couple of seconds, the rocket crosses the cloud layer and reaches max-Q (Maximum dynamic pressure on the rocket). The control station in the Netherlands constantly monitors the status of SLS and AvaLE to make sure that everything goes according to plan.

High-speed cameras follow the Rocket as it ascends into the atmosphere, broadcasting the launch to the Entire world.

T + 5 minutes into the Launch. The Rocket Crosses the Karman Line (The Boundary between the Earth's Atmosphere and Space), T + 8 Minutes into the Launch, The Rocket successfully achieves a stable Earth Orbit.

Everyone either breathed a sigh of relief or erupts into cheers that the Rocket was able to complete the hardest part of the mission. The entire Deep space communication network around the world focuses onto the now orbiting AvaLE to maintain a constant stream of communication between the mission control and AvaLE.

Over the next few days, AvaLE activates all of its primary systems in Earth's Orbit (Including its Cameras, Telemetry, Nuclear-Thermoelectric Generators, Reaction Control systems and Transponders) and prepares for the Lunar Injection trajectory.

3 Days after the initial launch, AvaLE activates its thrusters and establishes a Free Return Lunar Trajectory. The AvaLE rover module detaches from the Return Rocket and accelerates into a faster trajectory to reach the Moon faster.....

While approaching the moon, the cameras aboard AvaLE takes a picture of the Moon, which is transmitted back to Earth. Upon receiving it, the image is released to the Public.



The image immediately captured the headlines on the entire world's media. Everyone is in awe at the beautiful image.

After a couple more hours, the AvaLE Rover module descends onto the surface of the moon successfully.

AvaLE only has around 2 hours to collect samples and launch them into Lunar Orbit before the Return rocket arrives.

For the next 1 hour, AvaLE works tediously to collect all the samples specified in the mission. Some contain Lunar Rocks of varying densities, others contain rocks with different mineral compositions.

15 minutes before the Return rocket arrives, AvaLE successfully collects all the samples and drives to the designated launch site. As AvaLE prepares its Sample Launch Sequence, there's a problem...

The Clamps that were supposed to keep the Ascent Stage Rocket stably attached to the rover don't open correctly, effectively trapping the rocket in place...

The Mission control panics. The return rocket will reach the Receiving position in about 10 minutes, if they miss it, then the entire mission will fail. After a bit of brainstorming, one of the engineers came up with the idea to use the Reaction Control System thrusters of AvaLE to dislodge the rocket clamps. The Team immediately sends the command to AvaLE for doing so as everyone hopes that this solution works...

Fortunately, the thrusters were able to dislodge the clamps enough for it to open. The Ascent rocket is finally free. It fires up its engines and soars to the sky away from the rover with the samples.

The Return Rocket captures the samples successfully and begins its journey back to Earth...

Just 2 days later, the Lunar samples finally arrive on Earth as recovery teams rush to get the samples back to HQ...

Over the next few months, the samples are subjected to intensive study in labs across the globe.

All the research teams unanimously reach the same conclusion about the formation of our moon.

The theory suggests that an approximately Mars-sized planet named 'Theia' collided with the Earth around 4.4 Billion Years ago! The impact, now named 'The Giant-Impact Hypothesis'. This collision was so violent that it launched Millions of Tons of material from the Crust and Mantle of the Earth into space.

This material later formed a ring around our planet, where it gradually coalesced into the Moon we know and love today!

This new perspective about our moon created a tsunami of headlines around the world, and people now can see the Moon in a New Light, all thanks to the efforts of the entire Scientific Community around the world, especially ISERO.

The Motivational Speaker Les Brown gave a Quote regarding the topic: "Shoot for the moon. Even if you miss, you'll land among the stars."

After the completion of the initial mission, AvaLE now roves the surface of the moon in search of more answers and even to ask new questions about our Cosmic Brother!!

Another success for ISERO, as it continues to study and explore this magnificent universe that we live in!

The End!

Written (with love) By: Taha Husain

Hello there, fellow reader!

Firstofall, Thanks a lot for reading this story till the end!

This story was just a small attempt by me to showcase the incredible history of our Moon and the amazing work scientists do to teach us about the universe! I hope you liked it!

(Oh, and btw, that image of the Moon's surface I used was actually taken by me using my awesome Telescope!)